REMARKS

Claims 1-18 are now in the application. By this Amendment, claims 1, 2, 7, 10, and 15 have been amended. Support for the amendments to independent claims 1, 10, and 15 is found at least at page 3, lines 20-29, of Applicants' disclosure. The pending claims have been further amended to correct informalities. Claim 18 has been added. Support for claim 18 is found at least at page 5, lines 22-27, of Applicants' disclosure. No new matter has been added.

Applicants appreciate the courtesies extended to Applicants' representative during the February 5, 2009 personal interview with Examiner Nguyen and Examiner Mayes. The following remarks constitute Applicants' separate summary of the substance of interview.

During the February 5 interview, a discussion was had regarding the recitation related to clarifying the binder composition. Along those lines, please note that Applicants disclose, for example at Table 1 on top of page 10, a binder comprising a vinyl-C_2-C_4-carboxylate and an α-olefin. Accordingly, independent claims 1, 10, and 15 have been amended herein to more positively recite the claimed subject matter. Specifically, claim 1 has been amended to recite a binder dispersion comprising a copolymer consisting essentially of an α-olefin whose α-olefin content is from 37 to 30 mol% and a vinyl-C_2-C_4-carboxylate whose vinyl-C_2-C_4-carboxylate content is from 63 to 70 mol%. Similar subject matter is recited in claims 10 and 15.

Claims 1-17 have been rejected under 35 U.S.C.§103(a) as being unpatentable over U.S. Patent No. 5,792,719 to Eberle et al. in view of U.S. Patent No. 4,510,274 to Okazaki.

As appreciated by the Examiners, Eberle cannot reasonably be considered to suggest features corresponding to a binder dispersion comprising a copolymer consisting essentially of an α-olefin whose α-olefin content is from 37 to 30 mol% and a vinyl-C_2-C_4-carboxylate whose vinyl-C_2-C_4-carboxylate content is from 63 to 70 mol%, as recited in claim 1, or corresponding to a binder or a binder composition comprising a copolymer consisting essentially of an α-olefin, wherein the α-olefin content is from 37 to 30 mol%, and a vinyl-C_2-C_4-carboxylate, wherein the

vinyl-C_2-C_4-carboxylate content is from 63 to 70 mol%, as recited in claims 10 and 15, respectively.

The Office Action relies on Okazaki for curing the deficiencies of Eberle. However, Okazaki fails to suggest the features that the Office Action attributes to this citation. Okazaki suggests an emulsion comprising a quarterly copolymer prepared from (I) ethylene; (II) vinyl acetate; (III) an acid monomer; and (IV) an acrylamide. As set forth at col. 3, lines 5-8, components (III) and (IV) are essential to provide functional groups for binding to, e.g., an epoxy resin. Thus, the emulsions in Okazaki do not consist essentially of a copolymer comprising ethylene and vinyl acetate because they contain further monomer compounds. As such, the quarterly copolymers of Okazaki are materially different from an ethylene-vinyl acetate copolymer because the quarterly copolymers can bind to epoxy resin.

In addition, Okazaki, at col. 2, line 60 to col. 3, line 13, teaches away from the claimed subject matter because Okazaki suggests that binary emulsions of vinyl acetate-ethylene have an adhesive power that is not satisfactory.

During the February 5 interview, Examiner Nguyen asserted that the quarterly copolymers suggested in Okazaki comprise ethylene and vinyl acetate within the ranges recited in claims 1, 10, and 15. Okazaki suggests, at Table 1, cols. 17-18, four examples comprising between 22.0 and 24.7 parts by weight ethylene per 100 parts by weight vinyl acetate. With a molecular weight of 86.09 g/mol for vinyl acetate and 28.05 g/mol for ethylene, the examples comprise approximately 1.162 mol vinyl acetate and between 0.784 mol and 0.881 mol ethylene. Thus, the molar percentages of vinyl acetate with respect to the number of mols of vinyl acetate and ethylene in the four examples of Okazaki is between $(1.162/(1.162+0.784)) \approx 59.7$ mol% and $(1.162/(1.162+0.881)) \approx 56.9$ mol% vinyl acetate, which is below the claimed range. Further, the examples of Okazaki include between 4.0 and 5.0 parts by weight of an acid monomer and 4.0 and 5.0 parts by weight of an acrylamide compound. Thus, the actual mol percentage of vinyl acetate in the exemplary copolymers of Okazaki is even lower than 56.9 to 59.7 mol%.

In addition, Applicants respectfully submit that there is no explicit teaching in Okazaki to use a binary copolymer consisting essentially of 30 to 37 mol% ethylene and 63 to 70 mol% vinyl acetate. During the February 5 interview, Examiner Nguyen asserted that the quarterly copolymers of Okazaki contain ethylene and vinyl acetate in amounts that overlap with the claimed range. However, the copolymers of Okazaki require the presence of 0.5 to 7 parts of an acid monomer and 0.5 to 15 parts of an acrylamide compound. Thus, the preferred ranges of ethylene and vinyl acetate suggested in Okazaki are preferred ranges for these monomers in the quarterly copolymers, not for a binary copolymers having dramatically different properties. For example, Okazaki suggests, at col. 3, lines 4-6, that such a binary copolymer lacks functional groups necessary for binding with the functional groups of an added modifier, such as epoxy resin. In other words, the quarterly copolymers of Okazaki are different chemical compounds comprising acid monomers and acrylamide compounds in the copolymer backbone. A skilled artisan has no reasonably expectation of success that removing acid monomers and acrylamide compounds from the quarterly copolymers would result in a binary copolymer wherein the molar percentage of the remaining monomers ethylene and vinyl acetate has any particular advantage. In addition, it is unclear what the molar percentages of ethylene and vinyl acetate in the hypothetical binary copolymer would be. Is it the polymer obtained by leaving out the 4.6 parts of acid monomer and 4.6 parts of acrylamide compound suggested in Example 1 in Table 1 of Okazaki? Are the 4.6 parts of acid monomer and 4.6 parts of acrylamide compound replaced by 4.6 parts of ethylene and 4.6 parts of vinyl acetate? Or are the 4.6 parts of acid monomer and 4.6 parts of acrylamide compound replaced by ethylene because all four examples of table 1 comprise 100 parts of vinyl acetate?

Applicants note that leaving out the acid monomer would render Okazaki unsatisfactory for its intended purpose because Okazaki suggests, at col. 4, lines 52- 55, that if the quantity of acid monomer is less than 0.5 parts, the functional group density is too low so that the resultant copolymer is in shortage of adhesive property and cross-linking index. Leaving out the acrylamide compound would also render Okazaki unsatisfactory for its intended purpose because Okazaki suggests, at col. 5, lines 15-19, that if the acrylamide compound content is less than 0.5 parts, the aforementioned advantageous effects, particularly the effect of suppressing coarser

particles originated from the acid monomer, are limited. As set forth in MPEP §2143.01 V, the proposed modification cannot render the prior art unsatisfactory for its intended purpose. Specifically, if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Thus, Eberle may not be modified by Okazaki as proposed in the Office Action and the rejection necessarily fails.

The Office Action, at page 6, paragraph 5, asserts that the unexpected result of a lower hydrogen consumption that can be achieved with the claimed subject matter is merely another advantage of a catalyst as claimed. This assertion ignores that to manufacture the rejection, the Office Action has to combine two citations in search of support for the combination of all of the claim features of claim 1. In other words, a catalyst as claimed is not described in either Eberle or Okazaki. Further, as set forth above, Okazaki fails to suggest the features that the Office Action attributes to this reference. Moreover, a catalyst as claimed, of course, provides all the recognized and unrecognized benefits of the claimed subject matter. However, a skilled artisan would not have had a reasonable expectation of success that combining Eberle with Okazaki would result in a lower hydrogen consumption. Surprisingly, the claimed subject matter allows for a dramatically lower hydrogen consumption, which was not foreseeable to a skilled artisan from the disclosures of Eberle, Okazaki, or any permissible combination thereof.

Additionally, Eberle and Okazaki fail to suggest a catalyst having an H_2 consumption of less than 5.5 mol/mol of vanadium, as recited in new claim 18.

Claims 2-9, 11-14, and 16-18 depend, directly or indirectly, from independent claims 1, 10 and 15. Claims 2-9, 11-14, and 16-18 are in condition for allowance for at least their respective dependence on claims 1, 10, and 15, as well as for the additional patentable subject matter that each of these claims recites.

In view of the above amendment, Applicants believe the pending application is in condition for allowance.

Applicants concurrently herewith submit the requisite fee for a Request for Continued Examination. Applicants believe no additional fee is due with this response. However, if any such additional fee is due, please charge our Deposit Account No. 22-0185, under Order No. 13111-00031-US1 from which the undersigned is authorized to draw.

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Respectfully submitted,

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